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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/682,430

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Kishore C. Acharya

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ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (GEMS)

136 S WISCONSIN ST

PORT WASHINGTON, WI 53074

EXAMINER

CATTUNGAL, SANJAY

ART UNIT

PAPER NUMBER

3768

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

01/30/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

09/682,430

Applicant(s)

ACHARYA, KISHORE C.

Examiner

Sanjay Cattungal

Art Unit

3768

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 4-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments with respect to claims 1, and 4-36, have been considered but are moot in view of the new ground(s) of rejection. All the previous rejections have been withdrawn and prosecution is reopened on Claims 1, and 4-36.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent No. 6,629,469 to Jaszczyk et al. in view of U. S. Patent No. 5,052,934 to Carey et al.**

4. Regarding **Claims 1 and 7**, Jaszczyk teaches a dynamic cardiac phantom comprising: a phantom body made of pliable material to expand and contract based on an injection and discharge of fluid therein, wherein the phantom body has a shape to simulate that of a heart, the phantom body further having a shell made of the pliable material and that defines a fluid chamber in a volume defined by an interior surface of the shell (Abstract, Col. 2 Lines 9-60 and Fig.1-8); a plurality of protrusions connected to the shell and in fluid communication with the fluid chamber, each of the plurality of protrusions having a shape to simulate a respective chamber of the heart (Fig. 1-8 and Col. 4 lines 5-41); and at least one inlet connected to the shell at one end and fluidly

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connected to the fluid chamber, the at least one inlet having another end connectable to a fluid source to pass fluid to and from the fluid chamber and the plurality of protrusions in a manner to simulate cardiac motion. (Abstract, Fig. 1-8, Col. 6 Lines 55 through Col. 7 lines 34, and Claim 1)

Jaszczak does not expressly teach that the system has multiple inlet and outlets. Carey discloses a cardiac phantom with multiple inlets and outlets. (Fig. 7 element 102, 130 and 60)

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jaszczak with a setup of multiple inlets and outlets as taught by Carey since such a setup would result in a phantom that's more close in setup to an actual heart and hence the flows could better be understood.

5. Regarding **Claims 4-6 and 8-24**, Carey teaches that a cam-drive system that allows user to make independent fine adjustments to the stroke volume. (Col. 9 Lines 35-45)

6. Regarding **Claims 25-32**, Jaszczak teaches phantomming a cardiac motion for use with a scanner comprising: connecting a balloon having an inlet and plurality of tubular protrusions to a fluid reservoir; filling the balloon with fluid; circulating fluid to and from the balloon; and acquiring image data from the balloong during circulation step. (Abstract and Fig. 1-8)

7. Regarding **Claim 33**, Jaszczak teaches that the cardiac phantom could be imaged using Mri, xray, CT, and NM/PET scanner (Col. 10 Lines 9-15)

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8. **Claims 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent No. 6,629,469 to Jaszczak et al. in view of U. S. Patent No. 5,052,934 to Carey et al. further in view of U. S. Patent No. 6,498,828 to Jiang**

9. Regarding **Claims 34-36**, Jaszczak and Carey teach the use of an expandable balloon having a number of tubular protrusions and an inlet configured to receive circulating fluid such that circulation of the fluid simulates cardiac motion that is being scanned by a CT scan system.

Jaszczak and Carey do not expressly teach all the details of the CT scan system.

Jiang teaches a computed tomography system comprising: a rotatable gantry having an opening (Abstract and Fig. 2 element 30); a high frequency electromagnetic energy projection source to project high frequency energy toward an object (Abstract and Fig. 1); a scintillator array having a plurality of scintillators to receive high frequency electromagnetic energy attenuated by the object (Abstract); a photodiode array having a plurality of photodiodes, wherein the photodiode array is optically coupled to the scintillator array and is configured to detect light energy emitted therefrom (Fig. 4 element 52); a plurality of electrical interconnects configured to transmit photodiode outputs to a data processing system (Fig. 4); a computer to produce a visual display based upon the photodiode outputs transmitted to the data processing system (Fig. 2 element 36)

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jaszczak and Carey with a CT scan system taught by Jiang, since

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such a setup would result in a cardiac phantom imaging system where in one device could do all the functions of a cardiac phantom and image the phantom.

**Conclusion**

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sanjay Cattungal whose telephone number is (571)272-1306. The examiner can normally be reached on 9:30 - 5:00 pm.

11. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eleni Mantis-Mercader can be reached on (571)272-4740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



SPC



ELENI MANTIS MERCADER  
SUPERVISORY PATENT EXAMINER